

The 50 MHz DX Bulletin

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AMATEUR RADIO IN CHINA

With some emphasis on 50 MHz

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My recent visit to China, together with three other VK amateurs, was primarily to participate in a Radio Direction Finding competition in Nanjing. We also had the opportunity to visit four club stations and meet a number of Chinese Amateurs.

Four prefixes were noted to be in use; BY for club stations, BZ for individuals, BT for special events, and BR for repeaters. At this stage in time, no private individual has equipment at home. Consequently, their operating is done from a club station where they can use their own or the club's callsign.

I noted QSL cards being sorted and it appears that most individual call holders use their club mailing address and that they are responsible for their own QSL'ing. One of the club's directors handles the cards sent to the club call. From my observations, log keeping appeared to be of a satisfactory standard.

There are four license classes with first class being the highest and demanding a 90 character per minute (CPM) morse ability. The second class license has a morse requirement of 80 CPM and the third class 70 CPM. I understood, though there was some language difficulty, that both the transmitting and receiving morse tests were for a duration of ten minutes each, a long period by our standards. There is a graded technical examination for the above licenses. The fourth class license is for SWL's and no call sign is available.

Apparently there are 30 to 40 licensees in each of the first and second classes in the whole country. When I enquired about the number of third and fourth class license holders, the answers were "many" and "many many" respectively...guess we draw our own conclusions!

In Beijing we visited BY1PK and, as this station is in the national capital, the fact that it seems the best equipped is no coincidence. The station is on the top floor of a four story building with the antennae on the roof. There are two HF stations with associated beams...one station is dedicated to packet. A satellite station (Mode B) and the 2 meter repeater (BR1PK) are also installed.

The 6m equipment consists of a TS-670 feeding a manually rotatable 6-element yagi about 3 meters above the roof. It was noted that when the beam is

facing the east, it is firing into a concrete structure on the roof. The 6m rig had been disconnected, but was soon reconnected when I showed interest. A few CQ calls were made, but no response. One of the club directors told me that they have only ever worked JA on 6m and he seemed fairly well convinced that they were too far north to enjoy any other worthwhile propagation. Naturally, it was difficult to convince them otherwise, however, the subsequent contact between VK4JH and Mongolia may help the argument. To my way of thinking Beijing lies nicely between Mongolia and Japan, so it should be workable, at least from this part of the world. The fact that the 6m rig was disconnected and that Kang, BZ4SAA, said BY1PK was not very active on 6, indicates they need some more inspiration!

We next visited Nanjing, 300 km west of Shanghai, which was the venue for our Radio Direction Finding activities. The club had a special call, BT4RDF, organised for the duration of the above activities and is set up for HF operation including packet. No 6m activity is possible in Nanjing due to the band being occupied by a local 62.5 kw channel C1 television transmitter.

The next club visited, Zhenjiang, is about 70 km east of Nanjing and is part of a complex known as the "Childrens Palace." This complex seems to me to be dedicated to both general education and many extracurricular activities of which amateur radio is one. The station, also on the top floor of a 3 story building with the antennae on the roof, is equipped for HF and 6m. The 6m station has the advantage of a 150 watt amplifier. There had been a problem with the 6-element 6m beam, and as an inline SWR/power meter is permanently connected, I observed that the SWR was quite low and the amplifier was delivering 100 watts.

The director of the station is retired from the army where he was the chief instructor in radio signalling. His wife, an English teacher, and his two sons, one of whom is soon to graduate in electronics, were all present and they all hold amateur licenses. The director prefers CW operation and was not aware of the 50.110 calling frequency or the 28.885 liason frequency. I did note in the 6m logbook contacts with 3D2PO and VK8ZLX on July 26.

About 150km further east we visited BY4SZ in Suzhou where Kang, BZ4SAA, is the Director. Kang is well known in VK as he has supplied most of us with China on 6m. He has acquired some nice equipment for the club: an FT-ONE was feeding a TL-922 linear on HF; a Henry 2K4 linear and a 5 KVA mains power stabilizer looked very impressive. The station also

has a small HF rig which has been used on DXpeditions. A TS-600 or an FT-726 and a 5 element yagi are used on 6m and Kang is expecting, from a JA8 friend, a 500 watt amplifier due next year. QSL'ing may be a little slow from this station as Kang explained that the post office is quite a distance away, so they only clear it once per month. QSLs for Kang go to Wu Zhi Yuan, P.O.Box 51, Suzhou, China. The phone number is 221063.

So the club is the center of amateur radio activity in China and it is pleasing to note the emphasis on getting the young people involved. Actually, the clubs are under the control of the "Chinese Radio Sports Association" (CRSA) with the club Directors being paid by, and the clubs operating within, a budget provided by the CRSA. Nevertheless, most club equipment has apparently been donated by Japanese sources, and a little from American sources.

Regarding the accessibility of China on 6m, particularly from North America and a lot of the Pacific, I was thinking that the area around Guangzhou (Canton) could be the most practical. This area as well as being fairly well south, is close to the well established paths to Hong Kong and Manila. However, from what I could learn, there is no 6m activity and, indeed, no club activity, in that area. Possibly this could be followed up with some of the VS6 amateurs, some of whom may have contacts in that area.

[Editor's comments: I believe no contacts have yet been made on 6m between China and any of the 50 States or Canada. This is mostly because of inactivity at the right times, rather than lack of propagation. All of China is well-situated for 6m DX in general, as the geomagnetic equator runs about 10 degrees north of the geodetic equator in those longitudes.

For North Americans, the great-circle path would be shortest to the northeast sector of China, and to Mongolia. These distances are similar to those for Guam, southern Japan, and Korea. By contrast, Manila, Taiwan, Hong Kong, and southeastern China are all considerably farther away, so the propagation is less likely to those areas via short path. However, long path is a real possibility in the period around 1400-1900z beaming southeast from the US. Watch 49.73-.77 MHz for video carriers which should be conspicuous during any kind of 6m opening to the Orient.

Here are some Chinese callsigns which have been reported active on 6m at least once during Cycle 22: BY1PK, BZ1FB, BZ1FK, BZ1WH, BY4AA, BY4RB, BZ4AA, BZ4CBC, BZ4COP, BZ4DAE, BZ4DDL, BZ4SAA, BY5RA, BY5RB, BY5TS, BT5TS, BY5TS, and BZ5SW. The BY4RB QSL address is P.O.Box 413, Zhenjiang, Jiangsu, China. Another China tour narrative, by KM2X, appeared in the September QST on pages 14-17.]

NEW 6-METER BAND PLAN IN U.S.

As a result of the FCC's action extending the repeater subband down to 51 MHz last year, the ARRL VHF Repeater Advisory Committee proposed a new 6m bandplan. This plan was adopted by the ARRL Board at their meeting (reportedly without being on the agenda, and without participation by weak-signal operators) in July, and published in September QST.

50.0-50.1	CW, beacons
50.06-50.08	beacon subband
50.1-50.3	SSB, CW
50.10-50.125	DX window
50.125	SSB calling
50.3-50.6	all modes
50.6-50.8	nonvoice communications
50.62	digital (packet) calling
50.8-51.0	radio remote control (20 kHz channels)
51.0-51.1	Pacific DX window
Note: activities above 51.100 MHz are set on 20 kHz-spaced "even channels."	
51.12-51.48	repeater inputs (19 channels)
51.12-51.18	digital repeater inputs
51.5-51.6	simplex (6 channels)
51.62-51.98	repeater outputs (19 channels)
51.62-51.68	digital repeater outputs
52.0-52.48	repeater inputs (except as noted; 23 channels)
52.02, 52.04	FM simplex
52.2	TEST PAIR (input)
52.5-52.98	repeater outputs (except as noted; 23 channels)
52.525	primary FM simplex
52.54	secondary FM simplex
52.7	TEST PAIR (output)
53.0-53.48	repeater inputs (except as noted; 19 channels)
53.0	remote base FM simplex
53.02	simplex
53.1, 53.2, 53.3, 53.4	radio remote control
53.5-53.98	repeater outputs (except as noted; 19 channels)
53.5, 53.6	radio remote control
53.7, 53.8	
53.52, 53.9	simplex

Note that FM is now sanctioned down to 50.3, formerly held to 51.1 and above. Also note that the 52 MHz Pacific (VK) DX window has been dropped, and that the 51 MHz (ZL) window covers 51.0 to 51.1. This conflicts with the current practice of ZL DXers, who have been using 51.11 as their primary calling frequency. The obvious solution to this conflict is for ARRL to change the band plan, but it might make more sense to shift the (rare) ZL DX operations to below 51.1, where the probability of ionospheric propagation would be slightly higher.

PROPAGATION HIGHLIGHTS for 1991 August 26 to September 30

LONG PATHS: Several weeks ahead of expectations, long-path propagation showed up prior to the equinox. The festivities began on September 18 in the period 0927-1019z with the Cyprus and Greece beacons being heard, and I2ADN/IA5 in the Tuscan archipelago (JN43) being worked, by your editor via the Antarctic. On the 22nd between 2211 and 0020, the 9L1 beacon was heard on the L-P via North America into central and southern Queensland. The same path opened again on the 23rd from 2212 to 2242, and on the 24th from 2251 to 2400. Earlier on the 24th, JA1-4 had L-P via Africa to YV4AB/b, HI8A, and KP4; N7JJS/5 in Louisiana copied a JR6 at 1447 during this opening. Also on the 24th, the JA-9H L-P pipeline via South America opened around 2120-2323. That recurred on the 28th at about 2336-2400, and on the 29th at 2230-2320 the JA's had ZB2EO and 9H5EE.

ANTIPODAL PATHS: The South America-to-Far East route has opened at least thrice. On September 8 at 0150-0240, Japan worked PY, LU, and CE. On the 23rd at 2325-30 Japan worked PY. Then on the 28-29th at 2350-0040 PY5's worked JA and VS6 (indeed during that period PY5CC casually made 6m WAC in less than an hour---to which K6QXY commented: "disgusting!").

SHORT PATHS: Worldwide, the paths which are closest to being straight north-south are now opening almost daily. Examples include JA-to-VK, W5-LU/PY, and Europe-to-Africa & South America. Some of this is what we've grown accustomed to calling F2, and some is TEP; many openings of both types involve Es extensions. The VHF world lacks clear definitions of F2 and TEP; sometimes one mode metamorphoses seamlessly into the other, as on September 17 when 3D2PO copied K6FV/b almost continuously from 0041 past 0800! The old rule that TEP always has a flutter effect is clearly wrong, as anyone in the tropics can testify (at least on 6m), as is the rule that TEP paths must cross the geomagnetic equator. But labels needn't overly concern us; a new catch is welcomed regardless of how it propagates. Another old rule that needs to be tossed out is that (for mid-latitude stations) the band is useless for long-haul DX after sundown. Recent propagation from the south Pacific into W5, for example, has been worked as late as 0315z, long past local sunset in W5, and I believe it can occur even later than that.

The closely-watched North America-to-south Pacific path has been open almost daily since late August. Usually this involves some of W5-6-7-XE2 into some of FO-ZK1-3D2-ZL-FK-VK4-VK2. The earliest time for the overall path was 1925 (it may get earlier in October), and the latest was 1022! On two occasions it extended east of the Mississippi River. The first was mentioned in the previous Bulletin,

but here it is in the words of a participant:

"I'd like to report working my best DX ever on 6m. On August 26, 1991 at 0128z from my FN18 QTH in Maryland. I worked VK4BRG in QG48 on 50.120 MHz. The mode of propagation appeared to be F2 with E-layer enhancement for the final hop(s). Ron VK4BRG was being heard in the Washington, DC area about 15 minutes before I even got on. Everybody was calling but no one was having any luck. When I got into the pileup I decided to see if Ron was monitoring 28885. Fortunately he was, and we set up a calling sequence on 6m. I was running about 200w CW and VK4BRG was on SSB. We successfully exchanged calls and reports on the first try! What a thrill!!"---Rich K1HTV/3.

The other occasion of this sort was on September 4 when 3D2PO was heard in Ohio, Virginia, and North Carolina (at least) around 0115-0141. Unfortunately, Ian cannot listen on both bands simultaneously and the kind of liaison described above by Rich was not possible. So the W5's and 6's, 1-2 hops closer and louder, made all the contacts with 3D2PO (of course that situation is reversed with transatlantic DX).

The season's first reported VK-Europe opening took place on September 21 at 0755 when VK4FP in Townsville worked IK2GSO. A bigger opening occurred on the 28th, starting with a VK4FP-DL7QY contact at 0715, followed by VK8ZLX to PA3EUI at 0749. Then from 0910-1045 on the same day, VK4FP worked one F, one DF, and two ON stations.

The Japan-to-Africa short-path produced FR5SIX/b into JA6 from 0540 to 0830 on August 29, followed a few hours later by 7Q7RM into JR6WPT at 1121. On September 8, V51VHF/b was copied in JR6 at 1140-1205. FR5SIX/b was into JA4/6 on the 11th at 0635-0800, and there is an uncertain report of V51VHF/b into JR6 again at 1100-1300 on that date. On the 24th at 1630, 9J2HN was into JR6. And on the 29th at 0700, 7Q7RM was reported into Japan again. Nearby in the Philippines, KG6UH/DUL had his first ZD8VHF/b reception of the season on the 16th at 1545-1615, and again on the 29th around 1500.

The last paths to open as the season progresses are the east-west high-latitude ones. So as yet, nothing on 6m has taken place between Asia and North America, or Europe to Asia or North America, and Alaska is still in the "black hole." But the video indicators (48.25 and 49.75) are beginning to show up on all three of those paths. The intermediate-latitude Hawaii to ZD8-FY7-W4-5-6-7 and to JA-VS6 paths are showing results in the final days of September, initially via sidescatter off the equatorial zone, then straightening and strengthening. In the southern hemisphere, similar paths have opened such as PY5/ZP6 to ZS6 and to F05.

NEWS OF OCEANIA

Australian Beacons: The Darwin A.R.C. sent current details on their beacons. All use the same equipment (25 watts of cw to verticals 15 meters above ground), and message: "VK8VF QTH DARWIN PH57 K." A period (.-.-) will be added if there is a problem with any of the beacons. Nominal frequencies are: 28.268 (actual zero-beat is 28.2690), 50.056 (actual zero-beat is 50.0572), 144.480, and 432.480 MHz. Reports go to Henry Andersson VK8HA, Box 619, Humpty Doo, N.T. 0836, Australia (which is also the VK8 QSL bureau address). These beacons, at least the 10m and 6m ones, get out very nicely and the 6m one has been the most reliable indicator of VK propagation at my QTH. Meanwhile, Ron VK4BRG is working on a low-power beacon for central Queensland. The frequency will tentatively be 50.077. And Moss VK7IK reports that he has secured an allocation for 50.057 for his new VK7RSB beacon. This frequency if followed literally would be just 200 Hertz lower than VK8VF/b, an undesirable situation. Moss will try to change the allocation to 50.059, although about 400 Hertz lower than that would be best (thus bisecting the gap between the Darwin and Brazil beacons). It will operate with 100 watts into 6 elements aimed northeast, when Moss is not otherwise using 6m. The message will be "VVV DE VK7RSB QE37" repeated twice followed by a 10-20 second pause. The Australian government is said to be establishing the 50.050-.060 sector as beacon-specific, but some VK DXers are requesting a wider sector.

Brunei: Brian O'Connor V85EB (from VK2) has been active on HF for several months. On September 23, around 1130z, he got on 6m with an FT690R, and worked VK4JH and numerous JA's. Tnx KG6DX. A later report states that V85EB was to go QRT about September 27. Tnx ZL4AAA.

Fiji: Ian 3D2PO, for whose QSLs many have been patiently waiting, has arranged with VK3OT to be his manager for all contacts beginning September 4. Ian says he will attempt to clear the backlog of previous QSL requests as soon as possible. He recently upgraded to an IC726, a converted TL922 amplifier driven with a brick, and a 6-element yagi-uda on a 5.3 meter boom, so he should now have more ERP than any other south Pacific islander. He may pick up a T-E Systems 400w amp in October. Ian is very eagerly watching the short path to Europe around 0700-1100z (as are we all); the only previous 6m contact between Fiji and Europe was 3D2ER to Greece, but Ian's location in Lautoka has a lower horizon toward Europe than 3D2ER's in Suva. Ian has also constructed a 3-element beam for 28885 liaison. Another operator is now active: Aisea Aisake, 3D2AA, Box

4696, Lautoka, using a Yaesu transverter and 4 elements. The Fijians alert each other via landline about hot 6m DX, so a significant pileup of 3D2's can be expected if Europeans are heard. As with most Pacific DXers, Fijian operation usually starts on 50.110 and then, if appropriate, moves elsewhere within the 50.100-.130 sector. A DXpedition has just been announced for "3D2," presumably Fiji rather than Conway or Rotuma, on October 4-9. The operators will be JI1NJC, JJI1AEB, JN1BMX, and JN1GAG, and operation will be on 80m through 6m. Tnx JAI1VOK.

Fijian Beacon: The 3D2FJ beacon will be hand-carried to Fiji by Ian himself, arriving around October 12. It was displayed, along with the CU3 beacon, at W6JKV's 6m party on September 21. Hats off to Pat Bunn N4LTA for the handiwork!

Hawaiian Beacons: The KH6HI beacon was shut down temporarily on about September 7 until further notice. This beacon has been maintained by KH6HH, but Ken no longer has access to the mountaintop site. The (expletive deleted) KH6HME beacon continues on 50.0617 MHz zero beat. Its antenna is a sloping wire dipole, not a quad as earlier listed.

Kermadec Islands: Word was received on the HF nets that the callsign ZL8GBS has been issued to an operator for use at the Kermadecs. He was expected to arrive sometime in September, when the weather station staff will be changed. ZL1ANJ and your editor are hoping for information so that somehow a 6m rig can be included in this operation, but it doesn't seem likely at this point. An IC575H is on hand at KH6JEB for use on Pacific island DXpeditions. Readers may recall that the Kermadecs are now a restricted nature preserve; ZL2TPY was denied access for a 6m DXpedition there last year.

Lord Howe and Norfolk Islands: VK9YQS has completed his stay on Norfolk, where he only managed contacts with VK and ZL. He will now shift to Lord Howe for 3 months, but is unsure whether his situation will permit much operating on 6m. Tnx VK3OT.

Micronesia: V63YL is on from Yap, and will be there for some 2 years. He is active on HF (esp. 21260) and is hoping to put together a 6m station. QSL info is P.O.Box 687, Yap, P.S.M. 96943. Tnx ZL4AAA.

North Cook Islands: Too late for last issue, the news was been received from many sources that Mako JALOEM was to be QRV on 6m from beautiful Manihiki atoll (grid AH99) from September 24 to October 4. The callsign was ZK1XP, and a 5-element beam was used; rig unknown. It is believed that he worked JA, W6, V73AT, KH6, KG6DX, and VK4. QSLs go to his

home call. He also operated at a stopover in Rarotonga (South Cooks) on Sept. 19-22, and October 5-8.

Papua-New Guinea Beacon News: On September 28, Paul P29PL put his beacon on the air on its new low-end frequency, and it was immediately copied in KH6 and V73. The zero-beat is 50.019.9, with a bit of chirp. The message is simply "P29BPL" in fast cw. Paul is temporarily running it from his home, so operation will be intermittent until he has time to move it to a remote site.

NEWS OF ASIA

Hong Kong: Steve VS6XMQ recently completed the first VS6 6m SSB WAC, using an IC505, 100w amp, and 3 elements. Some other active 6m stations include VS6's WV, BI, BG, XLN, UW, XOS, XON, XPL, and XLB [I have also worked UP, XCL, XEK, XMQ, XRA, XRC, XVD, and XWR--editor]. Steve says they monitor 50.110 for SSB and 50.105 for CW. Tnx UKSMG. Their VS6SIX beacon is one of the world's most stable, reliable, and powerful; the exact zero beat is 50.0747 to 50.0748 MHz. Hong Kong was worked in North America in Cycle 21, but apparently not yet in Cycle 22. If you work them, ask if they can use the landline across the water to bring up an XX9, although VS6BI advises that there may not be a resident 6m op in Macao at the moment.

Lebanon: Samir OD5SK sent word that 6m is now available to Class A licensees, with a maximum of 100 watts output but no antenna restrictions. Samir himself has ordered a transverter from Germany and it will be hand-carried to Lebanon by a friend in December. This will be interfaced with a TS440S, and a 6m beam will be homebrewed. A 6m beacon is also planned, sponsored by the UKSMG, with the callsign OD5SIX. This will be co-sited with the new OD5TEN beacon which Samir built. Tnx UKSMG.

Mongolia: On September 28 and 30, JT1CO showed up and worked Perth stations in the period 0400-0800. They report that he runs a keyer on 50.105, but when you "break" the keyer, he comes back on ssb only.

Ogasawara: During September, at least two callsigns were reported active here: JM1GLZ/JD1 and JD1BFI. However, they continued the Ogasawara tradition of operating 6m only after local sundown.

Saudi Arabia: HZ1AB in Dhahran, in a recent contact with K6STI on HF, said that they have no 6m capability at this time. This is confirmed by W7CI who has just returned from Dhahran, and Steve adds that none of the club's operators showed any interest in 6m. It is unknown what has become of the 6m equipment

that Bert Godlewski was using there previously.

Spratty Islands: On September 29, Romeo showed up as 1S0RR, including on 6m. He generated substantial Japanese pileups, transmitting on 50.100 and listening up, and he also worked Hong Kong. He was only active there for 3 days.

Taiwan: Several contacts have recently been made between VK and BV2DP/DQ. Both stations are said to be running 10 watts to an inverted vee. Tnx VK4GUN.

NEWS OF NORTH AMERICA

Alaska: Tom NL7OW, who is quite active on 6m but is visually impaired, says he no longer has a QSL manager nor can he keep a written log. He has been sending out blank QSL cards to those who request QSLs. His grid is BP41 (ex-BP51) and QSL info is okay in the 91 callbook. Tom runs a TS680 and a 150-watt T-B brick into a 4-element quad. He and Al AL7C (who now has stacked M2 yagis) will be watching the short transpolar path to Europe this season, as 10m has been very good that way recently, although it has never been worked on 6m.

Clipperton Island: Word has just been heard that Clipperton will be activated, on HF at least, in the near future. Hopefully 6m can be included, as this is one spot that should have superb 6m propagation. Any information will be circulated via 28885.

Dominican Republic: Aki HI8A is active with 300 watts into 5 elements, and he is said to be definitely good for a QSL. Apparently he is also the operator of the HI0VHF beacon. Tnx UKSMG.

Jamaica: W3JO, N4HSM, et al are planning a trip to a resort on the north shore of 6Y5. Probably the operation will cover November 14-19; the license is good for November 14 to December 14. The rig will be a TS680S into 3 elements on 6m and a 10m dipole.

Saint Martin/Sint Maarten: Jim W6JKV will spend 5 weeks in the West Indies in November! This operation will be primarily at FS and PJ7, but Jim also has other licenses for the region including VP2EME, and may put them to use. Equipment is expected to be the customary kilowatt to a monster M2 yagi.

United States: the Midwest VHF/UHF Net meets at 9 pm EDT (0200z) Monday nights to arrange skeds for EME, tropo, scatter, etc. The frequency is nominally 3.836 LSB, but can vary between 3.835 and 3.845 to avoid QRM. Alternate nets, on the same day and time, are 50.150 (nc: John W28D); 144.250 (nc: KB8ZW); 144.265 (nc's: Bob K8RZB and Byron WA8NJR),

and 144.275 (nc: KAOZFU). Tnx KC4YO.

United States Beacons: Barry KF7VA is building a new beacon for Missoula, Montana (DN36). It will run as much as 60 watts into a Diamond 2 x 5/8 wl vertical about 80 feet above ground. Frequency will be 50.079 MHz. Also, Terry N6CW (DM12) has been running his keyer on about 50.070 while he is at work (daylight hours in the Pacific), beaming SW.

NEWS OF SOUTH AMERICA

Brazil: Peter PY5CC will be using special call-signs: PU5A on October 18-20, and ZX9A on Oct.25-27.

Ecuadorian Beacon News: Gus HC2FG says that his beacon will return soon, more powerful than ever, on a new frequency of 50.090 MHz.

Guyana: Two disparate sets of information have been received concerning two DXpeditions by some G4's. Paul G4CCZ circulated a letter via UKSMG dated September 13, which says he and Richard G4CVI are scheduled to operate using the call-signs G4SMC/8R1, G4CCZ/8R1, and G4CVI/8R1 from October 24 to November 1. They will be active "as time permits" including operation of a beacon on 50.100, and a watch on 28885. The 6m rig will be an FT650 and 6 element NBS yagi; the grid is GJ06. Another trip will occur in 1992 from April 20 to May 22, with the same two operators plus Mike G3SED and Mike G3JVL. They will be on all bands 160m-6m hopefully on a 24-hour basis. This tour will include 10 days' operation in PP8, with call-signs pending issuance of licenses. QSLs go via G4SMC. Both of these operations are related to the Camel Trophy event, which involves bashing through 1000 miles of rain forest with 40 Land Rovers. At press time, Bob ZL4AAA passed the following different set of dates: September 24 to October 10 for the first trip and April 20 to June 1 for the second. No matter when they go, they should be popular, and Neil G0JHC comments that the operators are all first class.

San Felix Islands: An indirect report has been received that CE3BPZ will be active from Isla San Ambrosio as XQ0CFZ starting October 1; no other details were known. The situation regarding the rig that was loaned to XQ0X is unclear.

NEWS OF ANTARCTICA

Antarctica: VK0KC will be QRV on 6m at Casey Station (operated by Australia), grid OC53, for 3-4 weeks starting on 1992 March 1.

NEWS OF EUROPE

Azorean Beacon News: The CU3 beacon was shipped by N4LTA to K6MYC at M2, who will bundle it with a stacked SLOOP antenna system and forward it to the Azores. Pat measured the frequency as 50.013.5 MHz.

Czechoslovakia: OK3CM reportedly has a 6m license now. Tnx ZL4AAA.

Faroes: Jan OY9JD says that he is not on 6m at the moment, but he is expecting delivery of an FT-650 at the beginning of October. He had previously been using an FT726R into 5 elements. Tnx ZL4AAA.

Finland: Kari OH2BC writes, "I know that there are very few stations trying EME on 6m but anyway I have decided to put up my 4 x 11 element M2 2.5 wl array. It will happen sometime in October; I have all hardware in hand already. Maybe I could reach some other EME operators via the Bulletin." Contact info: Kari Leino OH2BC, Pitkankalliontie 6-8 B 4, 02170 Espoo Finland...home fax 358 0 452 2346. Kari, I passed this info to Ray WA4NJP and he says he can be reached on the 2m EME net weekends (14.345 MHz) or messages for Ray can be left with others on that net. Ray is well-equipped for 6m EME.---Editor.

NEWS OF AFRICA

Ascension: Nick ZD8ACJ is expected to be QRV from September 19 to October 19, and is said to be pretty serious about 6m. QSL to his home call G0ACJ. Also ZD8Z will be QRV for 1-2 weeks in late October. Tnx N6CW. If hearing the ZD8 beacon, try to raise G4UPS or N7JJS/5 for possible help with telephone alerts to ZD8.

Botswana: Dave 9L1US now expects to commence operations at Gabarone (KG25) about mid-February, and hopes to run more power (already 160w) into 5-over-5. This capital city is near the Z36 border, some 300 km southwest of A22BW. Tnx G4IFX via UKSMG.

Cape Verde: Julio D44BC was worked in Europe in mid-September. His rig is a Swan 250 and 5 elements, and he reportedly has problems knowing his exact frequency. Julio needs encouragement to spend time on 6m, so if you hear him on HF, put in a good word. Also, Jim N6TJ will be active again on 6m from D44 in November (as he was 2 years earlier). He is there mainly for the Sweepstakes, but will do as much as he can on 6m on the 2 days before and 2-3 days after SS. Tnx N6CW.

Chagos: Tom VQ9TB has returned to Guam, so that looks like the end of VQ9 6m "activity" until fur-

ther notice. Tnx KG6DX.

Gough Island: ZS5AEN (former operator at ZS8MI) was due to arrive on ZD9 around September 24. It may be a couple of weeks before he is on the air. Hopefully 6m will be included in this operation. Tnx DXpress via TDXB.

Malawi: 7Q7JA has now departed from Malawi, but his rigs were distributed among other ops. 7Q7JL is already QRV. 7Q7CM will be active upon his return from leave in the UK. 7Q7LA will be active when a 6m xmtr arrives from the US. 7Q7RM has an IC726 into 5 elements and is awaiting the arrival of an amplifier from the US. All these ops are in KH74 except 7Q7LA who is in KH75. Tnx 7Q7RM via UKSMG.

Namibia: Cliff G1IOV has passed word that he can no longer manage QSLs for V51SW. Therefore all cards should be sent either to his home call (G00US) or to P.O.Box 22951, Windhoek, Namibia. Tnx UKSMG.

Tanzania: The equipment, including an IC551D, which had been used by 5H1YK has been turned over to 5H3RA (ex-JA3RAR). Tnx KG6DX and JALVOK.

Togo: Gerald 5V7JG (F2JD) is newly active on 6m, and is said to be a skilled op. He worked South America on September 24, and Europe on the 28th. TDXB says he will leave in December. QSL via F6AJA.

Zaire: The bad news is that 9Q5EE will go QRT on October 20. The good news is that Gus 9Q5TE (grid JI75) is now QRV with a homebrew transverter and a TS440S. Power output on 6m is only 2w at the moment but Gus hopes to have 9Q5EE's 150w amp sometime soon. His station is at the office, and he can remotely control it from home; he hopes to be active from both locations. This means that a set frequency has to be used with no QSY facility, and Gus has chosen 50.114 and 50.152. He had his first opening to northern Europe on August 29. Tnx 9H5EE via UKSMG.

COMMENTS ON WORLD DX RECORDS

In Six News #30 there is a banner headline, 'New World Record,' accompanied by an article describing a QSO on 1991 April 29 1536z between GM3WOJ and CX8BE. Quoting the last sentence, 'Our QSO was probably due to F2 or TE propagation carrying the CX8BE signals to the Auroral curtain, but as both

signals were tone-A, with no direct path signal [at the Scotland end], I claim this as a new distance record for Auroral working.' This is an interesting propagation report, but it raises several points.

First of all, as 80-90% of the path was spanned by ordinary, non-auroral propagation, it is quite a stretch to label the entire event an auroral one. By this reasoning, one could win a marathon by hitching a ride 90% of the way, then getting out and running to the finish line. Secondly, similar 6m DX events have occurred previously elsewhere. Just a few months ago, some 6m contacts were made between Alaska and Australia, with the same auroral link on the northern end, at a distance considerably in excess of the GM-CX path. It caused some interest, but nobody was heard to proclaim a World Record.

Let me take this opportunity to discuss World Distance Records in general. By the time 6m was a decade old, it was clear that propagation could easily span the distance between stations at each others' antipodes. As discussed in K.Davies' "Ionospheric Radio Propagation," there is a focussing effect at the antipodes, and this is being confirmed by amateur work at 50 MHz. Starting with a QSO between JA6FR and LU9MA on 1956 March 24, antipodal paths have been worked thousands of times. Thus, the limiting factor for the (short-path) World 6m Distance Record is not propagation, but the random luck of having someone exactly on the opposite side of the planet. The world short-path record exists between JA-HL and LU-CX simply because that happens to be where two regions of high-density 6m activity are situated opposite each other.

For these reasons, the competition for 6m short-path records has ceased, just as surely as on HF. Instead, let us turn our attention to pushing signals beyond the antipodes, i.e., long-path. This is not only a wide-open race, but can also be very revealing of 6m propagation modes (more on that in the future). It is the only correct way to measure a path which demonstrably exists. Think of the marathon analogy again. Do we measure the marathon's length as the crow flies or do we measure it on the actual route taken by the runner? Well, let's do the same with 6m DX, at least in the cases where the path is a straight great-circle one, as clearly indicated by antenna bearings at both ends. Additional proof can be taken from time-of-day information, which, on 6m, is showing itself to be rather tightly constrained. In contrast to HF, round-the-world echoes, or simultaneous long- and short-path propagation, are not seen on 6m. Perhaps the most reasonable approach for the record-keepers would be to satisfy everyone by keeping both kinds of records.

BEACON NOTES Part 1

Ever since the 1940's, 6m DXers have come to rely on beacons. Each passing year brings a few more beacon startups around the world.

Occasionally we hear of a DXer who doesn't like beacons. One reason given is that they don't want to hear a beacon in a country they haven't worked, if their CQs don't bring an immediate response from that country. Let's take the FY7THF beacon as an example. Now it's true that there is hardly any 6m amateur activity from FY, so it is not surprising that we hear that beacon often without being able to work French Guiana. However, with 6m propagation footprints being large at times, the FY7 beacon makes an excellent indicator for adjoining countries which may have more ham activity, but no beacon. Secondly, we can use the FY7 beacon as an intermediate waypoint on a more lengthy path. Thirdly, the dedicated DXer can keep a log of dates and times when the beacon is heard, and put this log to good use as a predictive tool whenever there is a DXpedition to, or new operator in, that region.

For me personally, FY7THF/b is the only signal from the Americas that I have ever copied via long path. Rather than complaining about not having made any contacts during those openings, I rejoice in the knowledge that the path exists. Armed with that knowledge, I will put extra effort into wringing out the path, which will surely pay off in the long run.

The other objection occasionally heard to the proliferation of beacons is that they remove some of the mystery of the band. This is a strange view; the 6m band is the only amateur allocation that was created specifically for the study of ionospheric propagation (see QST 1945 August, page 12). And despite our best efforts, there is no prospect that, within our lifetimes, 6m propagation prediction will become cut-and-dried as it is at HF. But if someone wants to reduce his information about propagation, he is free to avoid listening below 50.095.

The choice of location, frequency, and other parameters for a beacon, if poorly made, can be detrimental. As the worldwide number of beacons increases, the need for coordination becomes more acute. In the discussion of beacons which took place at W6JKV's party, several people expressed concern about the chaotic beacon situation in some parts of the world. If anyone can come up with a workable proposal to tackle this problem, and will volunteer to accept the responsibility to make it happen, I will gladly offer whatever support I can.

Location: Probably the worst problem is when someone, rarely a real 6m DXer, decides, without consultation, to run a beacon without consideration of nearby 6m listeners. If not carefully coordinated, such action can actually be deleterious to the

global study of propagation. For example, in the pristine RF environment on this island of Hawaii, there are two Six Maniacs who are among the few in the world who monitor 6m closely on a full-time basis; we don't miss much. Such a location should be the last place to put a beacon on the air. In 1989, I was able to continuously run a sweeping receiver from the DX window right down to the bottom of the band. Any signal picked up in that sweep was ipso facto a DX signal. With that method I routinely caught openings of less than 5 minutes' duration. Then a local, experienced 144- δ -up tropo DXer but one with no knowledge of 6m or the ionosphere, decided that what's good for 144- δ -up must also be good for 6m. So he set up a surplus transmitter as a beacon, and it's been on the air for 2 years now, causing unwanted QRM to this writer (4 miles away), despite diplomatic approaches to the operator. This is a unusually acute situation, but it is not unique, as I have also heard stories of other uncoordinated 6m beacons which QRM serious listeners.

Mode: Both CW and FSK have their advantages, depending on the situation. CW uses less spectrum, is easier to implement, has lower power consumption, and is familiar to all listeners. FSK stands out slightly more in noise, makes it more obvious that it is a beacon and not an operator, and probably is less objectionable (and identifiable) in TVI/RFI situations. It appears that FSK is favored more in Europe, while CW is favored more on the remaining 98% of the planet. If FSK is chosen, the spacing needs to be selected carefully: too narrow (9LIUS) is difficult to aurally decipher; too wide (VK4RBM/RIK) and it wastes spectrum and causes confusion. I would suggest 300 Hz as a compromise.

Message: Some beacons transmit "everything but the operator's birthdate," and you have to wait quite awhile to hear the callsign. While this approach may have its merits on HF where the band is open all day, 6m DXers do not usually have the luxury of lingering that long. Thanks to KA3B's detailed beacon lists, we can easily look up the particulars if we want them. So the general view is that the message should contain, at most, the callsign and the grid locator. A string of V's and the like just forces the listener to wait longer. In cases where the beacon is solar-powered, it may be necessary to reduce the overall duty cycle, and this can be done with a string of spaced dots, as done by WD7Z/b.

Power: We've all experienced openings where a watt into a wet noodle will work fine. So the question becomes one of marginal paths. It is my opinion that about 1000 watts ERP is the minimum for the average long-distance F-layer scatter path on 6m. Occasionally it gets more efficient than that,

perhaps being usable down to about the 100w ERP point. Below that level, and all beacons are operated below it, the difference between 5 and 50 watts ERP may add 20% to the amount of observable propagation. ZP5AA/b, with 5 watts ERP, has been repeatedly heard via antipodal and long-path. XE2HWB/b with just over 1 watt has been reported on 1-hop E_s at S9 levels. Still, I should add that some DXperts feel that 50-100 watt levels should be mandatory, and this space is available for a rebuttal.

Antenna: I believe that beacons should be omnidirectional in the horizontal plane. 6m openings occur in all directions, often in more than one at a time, and we never know which azimuth will produce the next hot catch. A beam allows close inspection of one path, but only at the expense of all other paths. Does anyone outside of Europe feel that UL8GCC/b is doing the right thing by beaming northwest? The other factor is polarization; if local QRM is an issue, it may be worth using a vertical even though verticals are widely held to be somewhat less effective than horizontals for 6m F2. The bottom line is that local listeners' RF reception should take priority over beacon effectiveness.

Frequency: There are now roughly a hundred 6m beacons worldwide, and most of them are in the sector 50.005-.087. This means the spectral density is tighter than one beacon per kHz, and thus, if beacons were equally spaced, the accuracy and stability of their frequency specification must be better than 500 Hz if they are to avoid transmitting atop each other. If ZL4AAA's proposal for 100 new "smart" beacons comes to fruition, then the frequency tolerance will need to be reduced to about 200 Hz. It will also be helpful if future beacon circuits include a trimmer so that a crystal can be tweaked onto a specified frequency. Early this year, the Radio Club Paraguayo volunteered to operate a 6m beacon, and sought advice as to the best frequency. Careful consideration produced the recommendation of 50.0245 MHz, and N4LTA began construction. Meanwhile, with no coordination, a new Venezuelan beacon appeared, nominally on 50.025. ZP5AA/b, when it commenced operation, turned out to be on 50.0251; luckily YV4AB/b also turned out to be 600 Hertz higher than its nominal frequency.

This raises the issue of precision frequency measurement. Most amateur transceivers read frequency directly in the SSB, AM, and FM modes. But in CW mode, the display is offset by 500-1000 Hertz in the receive state (for more on this, see WJ12's two-part article "What Your Frequency Display Really Tells You" in August and September QST). The correct way to measure beacon frequencies with the rig in CW mode is to match the signal's pitch to the pitch of your sidetone. Or you can switch to SSB

mode, tune for zero beat, and read the frequency. Either way, the result will be the same as if we connected a frequency counter directly to the beacon transmitter. The wrong way is to tune for zero beat in the CW mode. The frequency display may not be perfectly accurate, of course; for mine I have made a correction table using an external counter.

The next step is to unify the nominal frequency of beacons with the actual frequency. In some cases this has already been done: F05DR/b is nominally and actually on 50.0500, for example. Other beacons are far off the mark: JA2IGY/b is nominally on 50.012 and actually on 50.0100, and in Australia, as mentioned in the News section, the 1.2 kHz error of the Darwin beacon is presenting a problem.

The first thing I do when hearing a beacon for the first time is to record the exact frequency. Then on future occasions I know exactly where to park the VFO (with an appropriate offset to yield my favorite pitch), and listen deep into the noise for any trace of that beacon. Of course, a few beacons drift more than 100 Hertz, so it is useful to re-measure them from time to time until we find the highest and lowest frequency extremes. The nominal frequency should be the center of the drift range.

If a few key operators around the world will take a few seconds to measure the frequency of each beacon they hear and send them to me, we can quickly build a complete database. This in turn can be used to recommend frequencies for new beacons. Here, as a beginning, is my own list of recent (1991) measurements. In the case of PSK beacons, I measure the lower component. An asterisk means operation is known to be less than continuous.

XE2HWB cw .0079-.0081	WD7Z cw .0661-.0664
JA2IGY cw .0100	W7US cw .0683-.0686
JA6YBR cw .0169	K6FV cw .0687-.0691
V51VHF fsk .0183	*N6CW cw .0701
*P29BPL cw .0199	KK4M/7 cw .0704
FR5SIX fsk .0215	KH6HI cw .0728 (QRT)
ZP5AA cw .0249-.0253	NN7K cw .0742
YV4AB cw .0256	VS6SIX cw .0747-.0748
JA7ZMA cw .0269	*PY2AMI cw .0752-.0753
ZD8VHF fsk .0321	K7IHZ cw .0753-.0761
LU8YYO cw .0338	*K5ZXE cw .0763
*V73AT cw .0360	W6SKC/7cw .0764-.0767
FY7THF fsk .0387	PT7BCN cw .0776
SV1SIX fsk .0399	TI2NA cw .0790 ex797
ZL3MHF cw .0430-.0435	*HC8SIX cw .0819-.0822
*JR6YAG cw .0446-.0447	*V51E cw .1020
*F05DR cw .0500-.0501	JG1ZGW cw .4910
*JA5FPJ cw .0548	
ZS6DN a0 .0551	above 52 MHz:
VK8VF cw .0571-.0573	VK4RTL cw .4400-.4423
PY2AA cw .0600-.0602	VK4RBM fsk .4449-.4451
KH6HME cw .0617-.0618	VK4RIK fsk .4452

Using the 10-meter Liaison Frequency

28805 kHz is the global 6m "intercom." Its primary purpose is for announcements of current 6m propagation and DX activity. There is no need to call any specific station---it is not a net with an emcee---just grab the mic and blurt out your call-sign and your information. Emulate Peter's style: "This is PY5CC reporting 5V7JG on 50.105 ssb." Keep in mind that some 6m DXers listen but cannot transmit here, and others are "listening from a distance," so assume your announcements are useful even if unacknowledged.

For non-report types of traffic, especially regional chats, please QSY up or down. And if you must chat right on 28885, please at least use VOX so that you can be broken for hot propagation flashes.

If you have a question that can be answered by more than one person on the frequency, such as the ever-popular "what'd I miss today," don't call NI6E; I am using photovoltaics and must conserve battery power for essential traffic. It would be nice if more of the listeners would take some responsibility for answering questions and relaying significant announcements (to fill in the 10m skip zones), not just when relays are requested. Also, nobody ought to hesitate in answering BZ4SAA or other rare DX stations if they show up, and verbally "hold their hand" for a couple of minutes to keep them motivated, even if you've already worked them on 6m; someone will return the favor with a country you need.

Finally, set yourself up to monitor both 6m and 28885 simultaneously. So often we hear someone make an announcement on 28885, then disappear to 6m, missing out on major traffic like "you're being heard in Europe." Get a separate receiver; the low-cost 10m rigs are fine for this application. Stereo headphones will let you keep track of both at once.

The 50 MHz DX Bulletin, founded by Harry Schools KA3B, is edited by Shel Remington NI6E, and copublished with Bob Cooper ZL4AAA/K6EDX/VP5D. Issued 10 times/year: in the middle of every month, and at the beginning of October, November, December, March, April, and May. Annual airmail subscriptions cost \$20.00 in the US; US\$22.00 in Canada; US\$25.00/year elsewhere. Make subscription remittances payable to Sheldon Remington/50 MHz and send to the address below. Send reports to the editor via mail or telephone 808-982-5800 between 2000-2300 UT. This Bulletin may be freely quoted, provided that credit is given. All dates and times are UTC, and given in ISO/ANSI format.

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The 6-Meter Party at Jim Treybig's

On September 21, I had the pleasure to meet some of you at the 6-Meter Barbecue and DX Party at the home of Jim Treybig, W6JKV, in Los Altos Hills, California. Guests included a veritable who's-who of western US 6m DXers, quite a diverse and interesting group. Lots of time was spent in far-reaching informal hobnobbing about every 6m subject under (and on) the sun. DXpedition announcements were made, check-ins were made on 28885, sumptuous meals and exotic northern California beverages were consumed, and, of course, the DX Window was monitored (but how did we miss that VK4 opening?).

In the evening, some talks were given, with Joel N6AMG moderating. The main feature was a discussion of TEP by Victor K6FV, with emphasis on the California-to-south Pacific path. A spirited discussion of the future of 6m beacons was followed by a presentation of Kerrville, Texas as the site of a VHF Ionospheric Propagation Symposium and CSVHF Conference next year on July 16-19. We watched videos of N6CA and friends mountaintopping around Baja California. A real highlight was the "tales of the one that got away" session at bedtime. My thanks to Jimmy, Joel, Bob, and all the other participants who made this party so enjoyable and productive, and for making it possible for me to attend.

Publishing assistance requested. Hilo, Hawaii is turning out to be a poor place to print a publication, with a bad mix of high cost and low quality. Accordingly, I request that one or more readers on the mainland take on the reproduction and circulation of this Bulletin. I will continue as writer/editor, and could transfer manuscripts either on floppy disk (3.5", Wordstar 5.5) or camera-ready. Please contact me ASAP if you can help. Mahalo!



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VIA AIR MAIL